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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,140	12/26/2001	Stanley A. McClellan	1662-54000 JMH (P01-3766)	3918

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EXAMINER	
CHUNG, JI YONG DAVID	

ART UNIT	PAPER NUMBER
2143	

DATE MAILED: 04/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/036,140	MCCLELLAN ET AL.	
	Examiner	Art Unit	
	Ji-Yong D. Chung	2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 7/23/2002.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-22 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-22 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 5/15/2002.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

9DC

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 1, 2, 5-7, 10-11, 13, 15-20, 22, and 23** are rejected under 35 U.S.C. 102(e) as being anticipated by Baudot et al (Baudot hereinafter).

With regard to **claim 1**, Baudot shows a system comprising:

a primary instance of a transmission control protocol resident on the first computer [See hardware device 100 in Fig. 1 for the "first computer." See TCP stack module 130, in Fig. 1 for "a primary instance of a transmission control protocol." See also paragraph 0045.];

a primary data structure coupled to the primary instance describing the state of an association defining pathways between the cluster and the outside computer [See paragraph 0033 for references to the connections, which are sockets ("primary data structure"). See paragraph 0045. The socket keeps the association between the endpoints. The first and second computers (See 200 in Fig. 1 for the second computer) form a cluster. "Remote end" in paragraph 0011 is the outside computer];

a secondary instance of a transmission control protocol resident on the second computer [See 210 in Fig. 1 for the second instance of transmission control protocol. See paragraph 0032];

a secondary data structure coupled to the secondary instance replicated from the primary data structure [See item 230 in Fig. 1. See paragraph 0045.];

an intra-cluster network coupling the first computer and the second computer [See line 400, in Fig. 1];

a synchronization process coupled to the primary data structure and the secondary data structure replicating the primary data structure to the secondary data structure across the intra-cluster network to synchronize the structures [See paragraph 0047];

wherein the primary instance comprises a first node in the association between the outside computer and the cluster and wherein the outside computer comprises an opposite node [The primary instance (the socket) comprises two nodes, one of which is the first computer. The remote end is the opposite end of the connection and "opposite node."];

wherein the secondary instance comprises a second node in the association between the outside computer and the cluster [The secondary instance (socket which the second computer owns) comprises two nodes, one of which is the second computer. See Fig. 1 and paragraph 0047]; and

wherein the association is configured such that the first node and the second node appear to the opposite node as different addresses for the same node [See paragraph 0051 and 0052, where the IP addresses are transferred].

With regard to **claim 2**, Baudot shows *the primary data structure is resident on the first computer and the secondary data structure is resident on the second computer*. See the discussion of above claim 1. See Fig. 1.

With regard to **claim 5**, Baudot shows *the synchronization process is triggered by detection of impending failure of the first instance*. See paragraphs 0055 and 0056.

With regard to **claim 6**, Baudot shows *the synchronization process occurs once after detection of impending failure of the first instance*. See paragraphs 0055 and 0056.

With respect to **claim 7**, its limitations have been discussed with respect to claim 1.

Claims 10-11, 15-20, 22 and 23 substantively incorporate all the limitations of claims 1-2 and 5, but in method form rather than in apparatus form, except for one limitation, to be discussed below in reference to claim 10. The reasons for the rejections of claims 1-2 and 5 apply to claims 10-11, 15-20, 22 and 23. Therefore, claims 10-11, 15-20, 22 and 23 are rejected for substantially the same reasons.

Claim 10's limitation that has not been discussed with reference to earlier claims is *updating state information regarding the association in the primary data structure*. However, updating state information is inherent in sockets; as new data is exchanged in a network, socket data is updated.

With respect to **claim 13**, Baudot meets the limitation, *the synchronization process occurs after every action of updating*, because the updating of the sockets after the failure of the primary server constitutes synchronization.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 3, 4, 8, 9, 12 and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Baudot.

With regard to **claim 3**, Baudot does not specify that *the outside computer comprises a cluster of computers*. However, it is a remote endpoint (See paragraph 0011), and thus must have either a standalone computer or a network of computers resident in an intranet.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use HA network as revealed in Baudot for increased reliability of the remote endpoint. See paragraph 0010.

With regard to **claim 4**, Baudot does not show:

the transmission control protocol comprises SCTP;

the primary instance is a primary instance of SCTP;

the secondary instance is a secondary instance of SCTP.

However, see paragraph 0009, which states that the technique described within Baudot's reference applies to SCTP. The communication stack would be based on SCTP and be the instances of SCTP on the first and the second computers.

With respect to **claims 8 and 9**, their limitations have been discussed with respect to claims 3 and 4.

With respect to **claim 12**, Baudot does not show *that the corresponding instance of the transmission control protocol on the outside computer does not recognize that the primary instance and the secondary instance are not the same instance, but does recognize that it is transmitting to an alternate address.* However, Baudot shows that the technique for HA can be used for the communication protocol SCTP as indicated in paragraph 0009.

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement a system that recognizes the difference between the IP address of the primary and the secondary server, because of the following reason.

In implementing HA system as Baudot disclosed, one must transfer the IP address of the primary server to the backup server upon the failure of the primary server. However, when one is using SCTP, the duplication of the IP address is not necessary, because SCTP provides for multi-homing (multiple IP addresses). The primary and the backup IP each would have an address of its own. Note that both IP's maybe controlled by the same instance.

Under SCTP, when the primary server fails, the remote system, in order to continuously communicate with the local system (despite the failure), *must* recognize, at some level in its communication protocol stack, the difference between the primary and the backup IP. Otherwise, it would not be able to properly switch over to the backup IP upon the failure.

From the standpoint of software implementation, the remote system would not know whether the second IP address represents a second instance or the same instance, because the primary instance may use multiple network interface cards, each of which have different IP addresses. Failure of one card would cause the remote system to switch to another card, with a different IP address.

Claim 21 incorporates all the limitations of claim 12, but in method form rather than in apparatus form. The reasons for the rejections of claim 12 apply to claim 21. Therefore, claim 21 is rejected for substantially the same reasons.

5. **Claim 14** is rejected under 35 U.S.C. 103(a) as being unpatentable over Baudot in view of Butler et al (Butler hereinafter).

With reference to **claim 14**, Baudot does not show that *synchronizing is triggered on a time schedule.*

Butler shows HA system in which servers transmit heartbeat signals periodically. See paragraph 0387, in which network information is updated. The servers synchronize their update information based on the heartbeat signals. See paragraphs 0390-0391.

It would have been obvious to one of ordinary skill in the art at the time of the invention to synchronize Baudot's communication network information based on periodic heartbeat, because as Butler shows in paragraph 0081, Butler's invention is directed to and therefore applicable to high availability servers. Baudot's servers are high availability servers and they need to be synchronized. See Fig. 1 of Baudot.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ji-Yong D. Chung whose telephone number is (571) 272-7988. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ji-Yong D. Chung
Patent Examiner
Art Unit: 2143

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